Database Downloading Scheme

Central database updates front end

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Since database information resides in both the Acnet central database as well as the distributed databases of some front-ends, it is desirable to implement a scheme to insure database consistency. This document describes the scheme designed to solve this problem for use with Linac-style local station/IRM front-ends.

Overview

When database entry is performed using DABBEL—or other Acnet stanadrd developed for the purpose—a post-process is triggered automatically following successful database update. Based upon the target node, a front end class type and property mask are obtained from a file of downloadable front ends that support the scheme herein described. The class type determines the particular downloading program that will send the property information to the front end. the downloading program may use the mask to select which properties are to be downloaded. Settable properties are downloaded via the SETDAT destination task name. Other properties are downloaded via the DOWNLD task name according to a new protocol designed for this purpose. All front ends participating in this scheme must have a DOWNLD task.

When downloading is completed, with successful acknowledgment coming from the front end, the Acnet download task updates for the target node a consistency time signifying that consistency between central and distributed databases has been maintained up to the present time. In the case that the front end is inaccessible at the time of downloading, or if other errors were detected while attempting the downloading, the Acnet task will not update this consistency time.

When a front end resets, and the DOWNLD task is initialized, a special query is sent to Acnet to find out whether the consistency time is up-to-date. If it is not, then all central database entries for devices in that node that were entered since the last consistency date will be downloaded.

Format of the SSDR

For Linac, the SSDR will contain the information that is needed by the front end that is *not needed* by Acnet. It also has to include a node and channel#, which is the primary key for accessing the front end database. The private fields are the analog control field, the associated digital status and control field, and the conversion flag and family offset fields.